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Design optimization and performances system of 28GHz ECRIS Heavy ion accelerator for multi charge ion implantation

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The implantation beam-line of the 28GHz ECRIS Heavy ion accelerator, in Busan, has been recently completed with a beam monitoring system, and a sample holder system for implantation. The new implantation system converts the multipurpose tool to implant ions, between H and U, in different materials with precise control. The size of the implantation area on target may be as large as 1 _ 10 mm2. The implantation chamber also designed carrying out in situ system on the mass spectrometer line during and the beam is measured by diagnostic system, as well as ion beam analyses. This advancement implantation system can be employed in novel applications such as a metal, polymers, ceramics, new materials and irradiation tests of structural and fabrication of functional materials for nuclear material and future fusion reactors. Implantation of multi-charge ion was carried out on the Copper, Zinc, Cobalt, Chrome substrate and the results of implantation tests and first experiments are shown.